

## CHAPTER 3 REVIEW PACKET

Directions:

In the box provided next to each target section, put an (S) if you were able to complete the section by *yourSELF*, an (H) if you received a *minimal* amount of *HELP* from me, a classmate, or another source, or a (D) if you felt the section was *DIFFICULT* and required you to get *a lot* of help. This will help provide you by giving you feedback as to what topics you should be focusing on as you prepare for the test. THIS IS DUE THE DAY OF THE TEST.



## Target 3A

Write an inequality that represents each verbal expression.

- 1.
- $p$
- is greater than or equal to 5

$$p \geq 5$$

- 2.
- $a$
- is less than or equal to
- $-4$

$$a \leq -4$$

3. 2 times
- $d$
- is less than 10

$$2d < 10$$

- 4.
- $r$
- divided by 5 is greater than 0

$$\frac{r}{5} > 0$$

Determine whether each number is a solution of the given inequality.

- 5.
- $2(m + 1) < -6$

a.  $-6$  YES

$$\begin{aligned} 2(-6 + 1) &< -6 \\ 2(-5) &< -6 \\ -10 &< -6 \end{aligned}$$

b.  $-4$  NO

$$\begin{aligned} 2(-4 + 1) &< -6 \\ 2(-3) &< -6 \\ -6 &< -6 \end{aligned}$$

c.  $-2$  NO

$$\begin{aligned} 2(-2 + 1) &< -6 \\ 2(-1) &< -6 \\ -2 &< -6 \end{aligned}$$



## Target 3B

Write an inequality for each graph.



$$x \leq 2$$



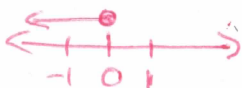
$$x > -4$$



$$x < -1$$

Graph each inequality.

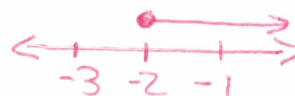
- 9.
- $y \leq 0$



- 10.
- $p > -4$



- 11.
- $a \geq -2$





# Target 3C

Solve each inequality. Graph and check your solutions.

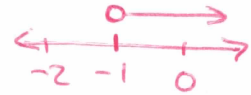
12.  $y - 2 < -7$

$$\begin{array}{r} +2 \quad +2 \\ y - 2 < -7 \\ y < -5 \end{array}$$



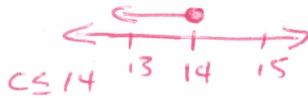
13.  $v + 6 > 5$

$$\begin{array}{r} -6 \quad -6 \\ v + 6 > 5 \\ v > -1 \end{array}$$



14.  $12 \geq c - 2$

$$\begin{array}{r} +2 \quad +2 \\ 12 \geq c - 2 \\ 14 \geq c \end{array}$$



15.  $8 \leq f + 4$

$$\begin{array}{r} -4 \quad -4 \\ 8 \leq f + 4 \\ 4 \leq f \end{array}$$



16.  $-4.3 \geq 2.4 + s$

$$\begin{array}{r} -2.4 \quad -2.4 \\ -4.3 \geq 2.4 + s \\ -6.7 \geq s \end{array}$$

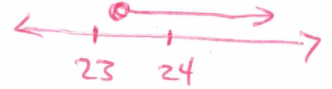
$$s \leq -6.7$$



17.  $22.5 < n - 0.9$

$$\begin{array}{r} +0.9 \quad +0.9 \\ 22.5 < n - 0.9 \\ 23.4 < n \end{array}$$

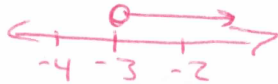
$$n > 23.4$$



Solve each inequality. Graph and check your solution.

18.  $\left(\frac{x}{3}\right)(-1)(3) > -1$

$$x > -3$$



19.  $\left(\frac{w}{4}\right)(1)(4) < 1$

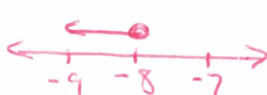
$$w < 4$$



20.  $-2(4) \leq \left(\frac{p}{2}\right)(-2) \quad -8 \geq p$

FLIP IT!

$$p \leq -8$$



21.  $-\frac{3}{2}(1) \leq \left(-\frac{2}{3}y\right)\left(-\frac{3}{2}\right)$

FLIP IT!

$$-\frac{3}{2} \geq y$$

$$y \leq -\frac{3}{2}$$



22.  $3m > 6$

$$\begin{array}{r} 3 \quad 3 \\ 3m > 6 \\ m > 2 \end{array}$$



23.  $3t < -12$

$$\begin{array}{r} 3 \quad 3 \\ 3t < -12 \\ t < -4 \end{array}$$



24. The goal of a toy drive is to donate more than 1000 toys. The toy drive already has collected 300 toys. How many more toys does the toy drive need to meet its goal? Write and solve an inequality to find the number of toys needed.

$d$  = donations

$$\begin{array}{r} d + 300 > 1000 \\ -300 \quad -300 \\ \hline d > 700 \end{array}$$

25. A family earns \$1800 a month. The family's expenses are at least \$1250. Write and solve an inequality to find the possible amounts the family can save each month.

$S$  = SAVINGS

$I$  = INCOME

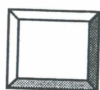
$E$  = EXPENSES

~~S = SAVINGS~~

$$S \leq 1800 - 1250$$

$$S \leq I - E$$

$$S \leq 550$$

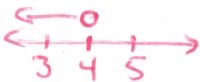


## Target 3D

Solve each inequality. Check your solutions.

26.  $3f + 9 < 21$

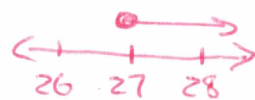
$$\begin{array}{r} -9 \quad -9 \\ 3f < 12 \\ \hline f < 4 \end{array}$$



27.  $4n - 3 \geq 105$

$$\begin{array}{r} +3 \quad +3 \\ 4n \geq 108 \end{array}$$

$$\begin{array}{r} 4n \geq 108 \\ \hline n \geq 27 \end{array}$$



28.  $33y - 3 \leq 8$

$$\begin{array}{r} +3 \quad +3 \\ 33y \leq 11 \\ \hline y \leq \frac{1}{3} \end{array}$$

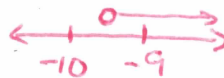
$$y \leq \frac{1}{3}$$



29.  $2 + 2p > -17$

$$\begin{array}{r} -2 \quad -2 \\ 2p > -19 \end{array}$$

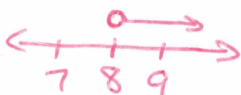
$$\begin{array}{r} 2p > -19 \\ \hline p > -9\frac{1}{2} \end{array}$$



30.  $12 > 60 - 6r$

$$\begin{array}{r} -60 \quad -60 \\ -48 > -6r \\ \hline -6 \quad -6 \\ 8 < r \end{array}$$

$$r > 8$$



31.  $-5 \leq 11 + 4j$

$$\begin{array}{r} -11 \quad -11 \\ -16 \leq 4j \\ \hline -4 \leq j \end{array}$$

$$j \geq -4$$



Solve each inequality. Check your solutions.

32.  $2(k + 4) - 3k \leq 14$

$$\begin{array}{r} 2k + 8 - 3k \leq 14 \\ -k + 8 \leq 14 \\ \hline -k \leq 6 \\ \hline -k \leq 6 \end{array}$$

$$\begin{array}{r} -k \leq 6 \\ \hline k \geq -6 \end{array}$$

33.  $3(4c - 5) - 2c > 0$

$$\begin{array}{r} 12c - 15 - 2c > 0 \\ 10c - 15 > 0 \\ \hline 10c > 15 \end{array}$$

$$\begin{array}{r} 10c > 15 \\ \hline c > 1.5 \end{array}$$

$$c > 1.5$$

34.  $15(j - 3) + 3j < 45$

$$\begin{array}{r} 15j - 45 + 3j < 45 \\ 18j - 45 < 45 \\ \hline 18j < 90 \end{array}$$

$$\begin{array}{r} 18j < 90 \\ \hline j < 5 \end{array}$$

35.  $22 \geq 5(2y + 3) - 3y$

$$\begin{array}{r} 22 \geq 10y + 15 - 3y \\ 22 \geq 7y + 15 \\ \hline 7 \geq 7y \end{array}$$

$$\begin{array}{r} 7 \geq 7y \\ \hline 1 \geq y \end{array}$$

$$y \leq 1$$

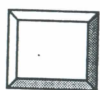
36.  $-53 > -3(3z + 3) + 3z$

$$\begin{array}{r} -53 > -9z - 9 + 3z \\ -53 > -6z - 9 \\ \hline -44 > -6z \end{array}$$

$$\begin{array}{r} -44 > -6z \\ \hline \frac{22}{3} < z \\ z > 7\frac{1}{3} \end{array}$$

37.  $20(d - 4) + 4d \leq 8$

$$\begin{array}{r} 20d - 80 + 4d \leq 8 \\ 24d - 80 \leq 8 \\ \hline 24d \leq 88 \\ \hline d \leq 3\frac{2}{3} \end{array}$$



## Target 3E

Write a compound inequality that represents each phrase.

38. all real numbers that are less than  $-3$  or greater than or equal to  $5$

$$n < -3 \text{ OR } n \geq 5$$

39. The time a cake must bake is between 25 minutes and 30 minutes, inclusive.

$$t \geq 25 \text{ AND } t \leq 30 \quad 25 \leq t \leq 30$$

Solve each compound inequality.

40.  $5 < k - 2 < 11$

$$\begin{array}{r} +2 \quad +2 \quad +2 \\ \hline 7 < k < 13 \end{array}$$



41.  $-4 > y + 2 > -10$

$$\begin{array}{r} -2 \quad -2 \quad -2 \\ \hline -6 > y > -12 \end{array}$$



42.  $6b - 1 \leq 41$  or  $2b + 1 \geq 11$

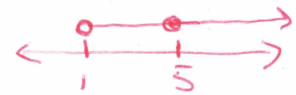
$$\begin{array}{r} +1 \quad +1 \\ \hline 6b \leq 42 \\ \hline b \leq 7 \end{array} \quad \begin{array}{r} -1 \quad -1 \\ \hline 2b \geq 10 \\ \hline b \geq 5 \end{array}$$

$b \leq 7$  or  $b \geq 5$



43.  $5 - m < 4$  or  $7m > 35$

$$\begin{array}{r} -5 \quad -5 \quad -5 \\ \hline -m < -1 \\ \text{FLIP IT} \quad \hline m > 1 \end{array} \quad \begin{array}{r} -5 \quad -5 \quad -5 \\ \hline 7m > 35 \\ \hline m > 5 \end{array}$$



44.  $3 < 2p - 3 \leq 12$

$$\begin{array}{r} +3 \quad +3 \quad +3 \\ \hline 6 < 2p \leq 15 \\ \hline 3 < p \leq 7.5 \end{array}$$

$3 < p \leq 7.5$



45.  $3 > \frac{11+k}{4} \geq -3$

$$\begin{array}{r} 12 > 11+k \geq -12 \\ -11 \quad -11 \quad -11 \\ \hline 1 > k \geq -23 \end{array}$$



46.  $3d + 3 \leq -1$  or  $5d + 2 \geq 12$

$$\begin{array}{r} -3 \quad -3 \quad -3 \\ \hline 3d \leq -4 \\ \hline d \leq -\frac{4}{3} \end{array} \quad \begin{array}{r} -2 \quad -2 \quad -2 \\ \hline 5d \geq 10 \\ \hline d \geq 2 \end{array}$$

$d \leq -\frac{4}{3}$  or  $d \geq 2$



47.  $9 - c < 2$  or  $-3c > 15$

$$\begin{array}{r} -9 \quad -9 \quad -9 \\ \hline -c < -7 \\ \text{FLIP IT} \quad \hline c > 7 \end{array} \quad \begin{array}{r} -9 \quad -9 \quad -9 \\ \hline -3c > 15 \\ \hline c < -5 \end{array}$$

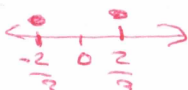


Target 3F

Solve each equation. Graph and check your solutions.

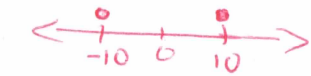
48.  $|b| = \frac{2}{3}$

$b = \frac{2}{3}$  or  $b = -\frac{2}{3}$



49.  $10 = |y|$

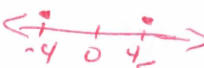
$y = 10$  or  $y = -10$



50.  $|x| - 5 = -1$

$|x| = 4$

$x = 4$  or  $x = -4$



51.  $7|d| = 49$

$|d| = 7$

$d = 7$  or  $d = -7$



Solve each equation. If there is no solution, write no solution.

52.  $|r - 9| = -3$

NO SOLUTION

53.  $|c + 3| = 15$

$c + 3 = 15$  or  $c + 3 = -15$   
 $c = 12$  or  $c = -18$

54.  $1 = |g + 3|$

$g + 3 = 1$  or  $g + 3 = -1$   
 $g = -2$  or  $g = -4$

55.  $4|v - 5| = 16$

$|v - 5| = 4$

$v - 5 = 4$  or  $v - 5 = -4$   
 $v = 9$  or  $v = 1$

$\{9, 1\}$

56.  $3|d - 4| = 12$

$|d - 4| = 4$

$d - 4 = 4$  or  $d - 4 = -4$   
 $d = 8$  or  $d = 0$

$\{8, 0\}$

57.  $|3f + 0.5| - 1 = 7$

$|3f + 0.5| = 8$

$3f + 0.5 = 8$  or  $3f + 0.5 = -8$   
 $3f = 7.5$  or  $3f = -8.5$   
 $f = 2.5$  or  $f = -2.8\bar{3}$

$\{2.5, -2.8\bar{3}\}$